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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/477,725	01/05/2000	HIROKI MAEDA	DAIN-540	9638

7590 09/11/2002  
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EXAMINER

VO, HAI

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 09/11/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/477,725

Applicant(s)

MAEDA ET AL.

Examiner

Hai Vo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-38 is/are pending in the application.
- 4a) Of the above claim(s) 34-36 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-33 and 37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. Claims 1-19 have been cancelled in the amendment received on 08/16/2002.

***Election/Restrictions***

2. Newly submitted claims 34-36 and 38 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:
  - I. Claims 20-33 and 37, drawn to an information recording medium, classified in class 428, subclass 1.2.
  - II. Claims 34-36, and 38, drawn to a method for recording information, classified in class 347, subclass various.
3. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can be used in a materially different process of using that product such as the one that applies voltage to the liquid crystal element to detect an optical response.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 34-36 and 38 are withdrawn

from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 20-28, 30-33 and 37 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hanna et al (US 6,224,787). The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Hanna discloses a photosensor comprising a pair of glass substrates **15**, **15'**, a pair of electrodes **13** and **13'**, a liquid crystalline charge transport material **14** filled into a gap between the electrodes wherein the liquid crystal material is phenylanthracene with the phase transfer properties as recited in the claims (figure 13, column 377, lines 25-29, example 2). Since the photosensor of Hanna meets all the limitations of structure and chemistry as set forth in the claims, it is the examiner's position that the relation of the thickness of the gap between the electrodes and the domain size of the liquid crystal compound would be inherently present. Note In re Best 195 USPQ at 433, footnote 4 (CCPA 1977) as

to the providing of this rejection under 35 USC 103 in addition to the rejection made under 35 USC 102.

With regard to claims 21, 22, 24 and 30, it is a product-by process claim. Hanna teaches a change in current value being observed upon light irradiation (column 377, lines 28-29). It is the examiner's position that the photosensor of Hanna is identical to or only slightly different than the claimed article prepared by the method of the claim, because both articles use the same materials, having structural similarity (a pair of substrates, a pair of electrodes and a liquid crystal material filled into the gap of the electrodes). Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or an obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious differences between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289,291 (Fed. Cir. 1983). The Hanna reference either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted Declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope

with the claims and how the Comparative Examples are commensurate in scope with Hanna.

With regard to claim 23, Hanna teaches the electrode being made of a transparent material (column 376, lines 28-30).

With regard to claim 25-28, examples 1 and 2 of Hanna read on the claim limitations.

With regard to claim 31, Example 2 of Hanna shows that the liquid crystal material has two smectic phases.

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanna et al (US 6,224,787) as applied to claim 20 above, in view of Eidenschink et al (US 4,490,305). Hanna is silent as to 4-heptyloxy-4'-dodecylbiphenyl.

Eidenschink the liquid crystal material as claimed by the present invention (see Formula I wherein X is hydrogen, R1 heptyloxy, and R2 dodecyl). It would have been obvious to one having ordinary skill in the art at the time the invention was made to fill 4-heptyloxy-4'-dodecylbiphenyl as the liquid crystal compound into the gap of electrodes motivated by the desire to transport the electrons for utilization of light emission at the electrode interface.

8. Claims 20-25, 30-33 and 37 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ishida et al (US 5,861,108). Ishida discloses a liquid crystal element comprising a pair of glass substrates **2**, a pair of transparent electrodes **3**, a liquid crystalline charge transport material **1** filled into a gap between the electrodes wherein the liquid

crystal material is phenylnapthalene (figure 1, column 120, line 47). Since Ishida is using the same liquid crystal compound to form a liquid crystal element and the liquid crystal element of Ishida meets all the limitations of structure and chemistry as set forth in the claims, it is the examiner's position that the phase transfer properties of the liquid crystal compound and the relation of the thickness of the gap between the electrodes and the domain size of the liquid crystal compound would be inherently present. Note In re Best 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made under 35 USC 102.

With regard to claims 21, 22, 24 and 30, it is a product-by process claim. It is the examiner's position that the liquid crystal element of Ishida is identical to or only slightly different than the claimed article prepared by the method of the claim, because both articles use the same materials, having structural similarity (a pair of substrates, a pair of electrodes and a liquid crystal material filled into the gap of the electrodes). Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or an obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious differences between the claimed product and the prior art product. *In re Marosi*,



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- 218 USPQ 289,291 (Fed. Cir. 1983). The Ishida reference either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted Declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with Ishida.
9. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al (US 5,861,108) as applied to claims 25 above, in view of Hanna et al (US 6,224,787). Ishida is silent as to 2-(4'-octylphenyl)-6-dodecycloxynaphthalene and phenylbenzothiazole as the liquid crystal materials. Examples 1 and 2 of Hanna teaches 2-(4'-octylphenyl)-6-dodecycloxynaphthalene and phenylbenzothiazole as the liquid crystal materials. See obviousness rational with respect to claim 29 in the paragraph no. 8.
10. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al (US 5,861,108) as applied to claim 20 above, in view of Eidenschink et al (US 4,490,305). Ishida is silent as to 4-heptyloxy-4'-dodecylbiphenyl. Eidenschink the liquid crystal material as claimed by the present invention (see Formula I wherein X is hydrogen and R1 heptyloxy, R2 dodecyl). See obviousness rational with respect to claim 29 in the paragraph no. 8.

### ***Response to Arguments***

11. The art rejections in Paper no. 10 have been overcome by the present amendment.


**Conclusion**

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426. The examiner can normally be reached on Monday to Friday, 8:30 to 5:00 (EAST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV  
September 6, 2002

  
TERREL MORRIS  
SUPERVISORY PATENT EXAMINER  
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